DOCUMENT RESUME

ED 437 689 CS 510 214

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TITLE Understanding College Students' Sex Risk Perception: A Health Communication Perspective.
PUB DATE 1999-11-00
NOTE 15p.; Paper presented at the Annual Meeting of the National Communication Association (85th, Chicago, Illinois, November 4-7, 1999).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Acquired Immune Deficiency Syndrome; *At Risk Persons; *College Students; Health Promotion; Higher Education; *Risk; Sex Differences; *Sexuality; *Student Attitudes
IDENTIFIERS Health Communication; Sexually Transmitted Diseases

ABSTRACT

A study examined why college students take sexual risks and documents the existence of optimistic bias, which suggests that individuals underestimate their personal risk to health hazards in relation to their peers. Subjects, 318 students enrolled in an introductory course in mass communication at a large east coast university, completed an anonymous survey instrument. Results indicated that (1) college students underestimate their personal risk compare to their peers; (2) this optimistic bias is especially high for sexual risks; (3) there was no relationship between optimistic bias and age or grade point average; and (4) males exhibited more bias than females. Findings suggest that the practice of safer sex is better predicted by perception than by actual risk, and that university health centers should consider all students "at-risk" of unplanned pregnancies, sexually transmitted diseases, and HIV/AIDS. Additional research is needed to clarify the influence of other variables on optimistic bias and the extent to which it can be modified by personal risk messages. Contains 43 references. (RS)

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Paper presented at the annual meeting of the National Communication Association

(NCA), Chicago: November, 1999

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Recent studies indicate that adolescents are aware of the risks associated with reckless sexual behavior, yet do not change such behaviors despite the efforts of mass media campaigns and educational programs. One promising explanation for this phenomenon is "optimistic bias" (Weinstein, 1984) which suggests that individuals underestimate their personal risk to health hazards in relation to their peers. Although optimistic bias is a theory of *perceived* risk, applications of the theory have shown that individuals act on their perceptions. For instance, Brickner, Lawton, and Philliber (1987) report that condom use is better predicted by women's perception of their risk of pregnancy (optimistic bias), than by their actual risk. Optimistic bias has also been shown to predict risky sexual behaviors (Moore & Rosenthal, 1991; Thurman & Franklin, 1990) as well as smoking behaviors (McCoy Gibbons, Reis, Gerrard, Luus, & Sufka, 1992).

Adolescent Sexual Risk Taking

Although becoming sexually active is a normal part of human development, health professionals and researchers are becoming increasingly concerned about sexually transmitted diseases (STDs), AIDS in particular, among the adolescent population (CDC, 1998). Although knowledgeable about the transmission of AIDS and STDs (Fisher & Misovich, 1991; Roscoe & Kruger, 1990; Weisman, Nathanson, Ensminger, Teitelbaum, Robinson, & Plichta, 1989), adolescents do <u>not</u> change their behaviors accordingly (DiClemente, 1990; Ross & Rosser, 1989). In fact, Cline and Mckenzie (1994) report

that in the last five years, men appear to have changed their sexual behavior in the direction of greater risk.

Table 1: Adolescent Sexuality

Sexually active by age 20[A]	
Girls:	70%
Boys:	80%
Adolescents with > 4 lifetime partners[B]:	20%
Adolescents using condoms consistently[C]:	< 10%
Sexually active teens using birth control pills[B]:	18%
Adolescents contracted STD by 20[A]:	14%
Teen mothers dropping out of school[D]:	> 50%
Teen mothers on welfare[D]:	> 50%
Firstborns with teen mothers[A]	
Euro-Americans:	20%
Latin-American:	30%
African-American:	50%
Sources of pressure toward sexual activity[E]:	
#1:	TV
#2:	Popular music
#3:	Peers

Sources: A: Greenberg et al., 1993; B: Fleming, 1996; C: Kegeles et al., 1988; D: Hamburg, 1992; E: Howard, 1985

Table 1 shows that adolescents are sexually active and at risk for social and medical repercussions resulting from sexual activities. Rates of infectious syphilis and gonorrhea are highest for adolescents and decrease exponentially with increasing age (Bell & Holmes, 1984). The US has the highest rate of teen pregnancy in the industrialized world and is the only such nation where these rates are rising currently (Biglar, 1989). Pregnant teens report not using contraception because they did not believe they could personally get pregnant (Pete & DeSantis, 1990).

Understanding why college students take sexual risks is the first step in addressing the problem. The purpose of this study is to document the existence of optimistic bias in college students. Information obtained in the study is potentially useful to university health centers and in the design of health communication campaigns.

Optimistic Bias

Objective and subjective risk are quite different. Weinstein (1987, 1983, 1982, 1980) shows that individuals make comparative risk assessments in an egocentric manner, paying little attention to the risk status of others when asked to determine their own relative risk. Weinstein originally labeled this phenomenon "optimistic bias." In lay terms, individuals believe they are less vulnerable to risks than others. Optimistic bias is a robust finding and has been replicated with a variety of contexts, including HIV/AIDS risk (Ellen, Boyer, Tschann and Shafer, 1996; Harris, 1996), sexually transmitted disease (STD) risk (Kaplan & Shayne, 1993; Turner, 1993), pregnancy risk (Eldridge, Lawrence, Little, Shelby & Brasfield, 1995; Smith, Gerrard, & Gibbons, 1997), cancer risk (Aiken, Febaughty, West, Johnson, & Luckett, 1995; Fontaine & Smith, 1995), smoking risk (Strecher, Kreuter & Korbin, 1995), substance abuse risk (Hansen, Raynor, & Wolkenstein, 1991; Miller, 1991), and general health risk (Glanz & Yang, 1996; Hoorens, 1996).

Some typical findings in optimistic bias studies include the following: Ellen, Boyer, Tschann, and Shafer (1996) reported that college students of three races (Euro-Americans, African-Americans, and Latino-Americans) consistently underestimated their HIV risk, compared to other college students. However, Euro-American students perceived themselves at less risk compared to other races, while African-American and Latino-American students did not differentiate risk perception on the basis of race. Smith, Gerrard, and Gibbons (1997) reported that college students consistently underestimated their risk of accidental pregnancy compared to other college students.

Miller (1991) reported that college students consistently underestimated their risk of alcohol abuse and addiction compared to other college students.

Each of the three studies described above demonstrate optimistic bias, the tendency to underestimate personal risk compared to the risk of others. Over 100 studies published between 1980 and the present confirm this finding. However, there is disagreement as to the influence of "individual differences" on optimistic bias. Although Weinstein (1980, 1987) suggests that the phenomenon is insensitive to age, gender, education, or occupation status, numerous others demonstrate a variety of individual differences. For instance, the three studies used to illustrate optimistic bias findings above each included some measurement of individual differences shown to influence optimistic bias. Ellen et al. (1996) found a difference in bias based on race, Smith et al. (1997) reported that individuals with high self esteem exhibited optimistic bias to a greater degree and individuals with lower self-esteem, and Miller (1991) reported that identification with a group led college students to perceive non-group members as being at greater risk of alcoholism than group members.

Although the phenomenon is well documented, studies directly addressing optimistic bias regarding STDs are fewer in number (Kaplan & Shayne, 1993; Turner, 1993), with most addressing one or two isolated variables that influence perceptual bias.

One reason to focus further on college students is that as a group, students' perception of peer norms favors risky sex (Fisher, Misovich & Fisher, 19992). Fisher et al. found that very few students believe their partners think they should always use condoms (20%) or would refuse to have un-safe sex (27%). Similarly, only 21% of the students said their friends believe they should always use condoms. Condom use at most

recent sexual encounter is highly correlated with perceived partner and peer norms. Since individuals act on such perceptions (Brickner et al., 1987; Moore & Rosenthal, 1991; Thurman & Franklin, 1990) research in risk perception has serious implications for sexual risk taking behaviors among college students.

The current study is exploratory in nature. It seeks to apply optimistic bias to a college student sample, at risk for negative outcomes of "un-safe" sexual activities including unplanned pregnancy, sexually-transmitted disease, and HIV/AIDS. Results of the study could be useful to college and university health centers, and could inform message design and educational campaigns targeted for college students. The study also has the potential to contribute to the existing literature by examining the impact of individual differences on optimistic bias. To these ends, the following research questions related to optimistic bias in the context of sexual risk perception are explored:

RQ1: Are college students unrealistically optimistic regarding sexual risks?

RQ2: How does optimistic bias about sexual risks differ from bias about other risks?

RQ3: Do individual differences predict variability in optimistic bias?

Procedures

Study Participants

This study seeks to document optimistic bias in a college student population and to explore differences in risk perception between sexual risks and other risks.

The students who participated in this study were enrolled in an introductory course in mass communication fall semester 1998, at a large east coast university. Of the 329 students enrolled in the course, 318 anonymously completed the survey instrument on a voluntary basis. The following week, the class reviewed the results and discussed

the implications of optimistic bias for the design of safer sex media campaigns. Similar to the composition of the student body, the sample was 65% female, ranging in age from 17 to 49 (M = 20). Self-reported GPAs ranged from 1.35 to 4.0 (M = 2.87).

Data Collection

Data was collected from the students during the first class meeting in conjunction with a routine class survey including media use and preference and background information. The surveys are referenced at numerous points in the semester to illustrate communication theories.

Optimistic bias was measured with a standard instrument designed by Weinstein (1984), asking students to compare their relative risk of "X" hazard compared with "Y" other: "Compared to your peers, what are the chances of the following happening to you:" (being involved in an auto accident, getting a sexually-transmitted disease, earning an "A" in this course, getting pregnant/causing a pregnancy, getting arrested): "not likely" (coded -1), "about average" (coded 0), "quite likely" (coded 1). Multiple hazards were used to answer RQ2 (How does optimistic bias about sexual risks differ from bias about other risks?). RQ1 (Are college students unrealistically optimistic regarding sexual risks?) may be answered by examining the frequencies: Although some individuals may actually be at less risk than their peers, these students should be offset by the number of students at greater risk, thus the mean should be "0." A negative mean would suggest optimistic bias, while a positive mean would suggest unrealistic pessimism.

Findings

Are college students unrealistically optimistic regarding sexual risks? College students are optimistic about avoiding most hazards, exhibiting some degree of optimistic bias across every hazard included in the survey. Students appear to be most optimistic about avoiding criminal arrest (82% say, compared to their peers, it is quite unlikely to happen to them), followed by contracting a STD (80%), experiencing and unplanned pregnancy (66%), and least optimistic about avoiding an auto accident (34%).

How does optimistic bias about sexual risks differ from bias about other risks? Optimistic bias is especially high for college students when they consider sexual risks, although they are more optimistic about their chances of avoiding STD's than of avoiding unplanned pregnancy. The fact that none of the 318 students surveyed consider themselves likely to contract an STD is especially relevant given that the age demographic is the most likely to contract an STD (Bell & Holmes, 1984), and that about 15% are likely to become infected at some point in time (Greenberg, Brown, and Buerkel-Rothfuss, 1993).

Do individual differences predict variability in optimistic bias? Consistent with previous research (see Weinstein, 1987 for a review), there was no relationship between optimistic bias and age or GPA. In contrast to Weinstein's (1987) findings, however, there were significant gender differences, with males exhibiting more bias than females. Unfortunately, of the previous studies that tested a gender difference in optimistic bias, half report gender effects (with males being more biased than females), but the other half report that gender has no effect on the phenomenon (Eiser, Eiser, and Pauwels, 1993;

Fontaine & Smith, 1995; Whalen, Henker, O'Neil, & Hollingshead, 1994; Weinstein, 1987).

Discussion

Recent studies indicate that college students are aware of the risks associated with reckless sexual behavior, yet do not change such behaviors despite the efforts of public health campaigns and educational programs. Integrating the findings from this study with previous research provides a number of vital pieces in solving this dilemma.

Firstly, college students underestimate their personal risk compared to their peers. Despite the growing concern of health professionals and staggering statistics, especially regarding STDs, college students take sexual risks because they believe "it won't happen to me."

Secondly, this optimistic bias is especially high for sexual risks. A number of explanations should be considered. Sexual risks, HIV/AIDS and STDs in particular, carry high degrees of social stigma due to associations with homosexuality, promiscuity, and drug use. Such social stigma may prohibit individuals from considering their personal risks. Social stigma is also likely to discourage infected college students from sharing their experiences. Given the current STD statistics, it's likely that each study participant knows (but is unaware of) someone who suffered negative consequences from sexual recklessness. This furthers common misperceptions about STDs and HIV/AIDS and the people at risk. The variance in optimistic bias in the current study could also be explained by hazard controllability. College students exhibited the most optimism regarding criminal arrest, which one can avoid by not committing a crime (speeding 10 m.p.h. over the speed limit was included as a possible reason for arrest). Students were

the least optimistic regarding automobile accidents, considered "uncontrollable" due to carelessness or lack of skill of others.

Finally, the practice of safer sex is better predicted by perception than by actual risk (Brickner et al., 1987). This suggests several implications for health centers and health campaigns.

University health centers should consider all students "at-risk" of unplanned pregnancies, STDs, and HIV/AIDS. Concentration on "high-risk groups" reinforces students' optimistic bias that it can't or won't happen to them. Similarly, the "Just Say No" approach to health campaigns is likely to be ineffective when the intended audience perceives themselves to be the exception to the rule. Campaigns guided by the concept of optimistic bias would include a "personal risk" element in messages. This could be accomplished by using testimonials from a wide range of college-age spokespeople, representing both genders and as many ethnic and racial backgrounds as possible. Identification is key: "It can happen to you because it happened to me." The reduction of social stigma would also go far in allowing college students to consider their personal risks and share their experiences openly.

Additional research is needed to clarify the influence of other variables on optimistic bias and the extent to which it can be modified by personal risk messages. Three areas in particular merit consideration. (1) The gender differences reported here reflect differences in risk taking: Males exhibit higher degrees of optimistic bias, perceive less peer pressure to practice safe sex, and take more sexual risks than females. It follows that other individual differences, like racial/ethnic differences, would also affect perceptual bias. (2) A link between optimistic bias and sexual behavior is implied here

and in previous studies. Establishing this link is an important first step in risk prevention. (3) Communication studies offers a concept similar to optimistic bias – third-person perception (Davison, 1983). The third-person perception hypothesis posits that individuals believe others are more influenced than they are by media messages. Linking the two concepts may further our understanding of both and provide a solid framework for risk prevention.

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